



# CLIMATE CHANGE AND MENTAL ILLNESS PREVALENCE: A CORRELATIVE REVIEW

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## ABSTRACT

The significant and devastating consequences of climate change for the environment are generally described by the scientific community as including rising sea levels, extreme and more frequent bushfires and floods, and other catastrophic changes in the world's climate systems. These climatic impacts should be considered when researching solutions to climate change, but not at the expense of the mental health impacts of climate change which research to date has tended to neglect. Severe weather events can have an alarming impact on mental health and wellbeing, and such impacts are likely to be exacerbated and increase as climate change unfolds. This study briefly explores the correlation between severe weather events and mental illness, discussing a range of key social, economic, and environmental events that are clearly linked to serious mental illness outcomes, suggesting these serious outcomes will occur at an increasing rate, and examines how the climate mental illness nexus will impact both people with existing mental illness and those of stable mental health.

**KEYWORDS:** climate change, mental illness, farmer suicide, PTSD.

## Introduction

In the last few years, the direct and indirect correlation of climate change, its implications for societal and economic cohesion, and exacerbated and newly established mental illness has become very clear (see Figure 1). Recent studies of various mental illnesses such as PTSD, depression, and suicidal ideation have all linked such illnesses to specific severe climate events. With constant and rapid change in climate the effects of climate change will see *The World Health's Organisations* predicted 12.6 million deaths per annum impact the mental wellbeing of those most vulnerable to climate change, many of whom reside in countries least equipped to deal with mental health impacts of severe weather events. Despite there being sound evidence of a clear link between mental illness and extreme weather events, a lot of research to date has only discussed mental health issues in rather vague terms, leaving governments able to leave the mental health impacts of climate change at the periphery of policy making. This paper aims to collate some of the key literature on this topic to provide a solid understanding on the serious impact of climate change has and will continue to have on human psychology and the current limitations in the research literature.

extreme weather and mental illness. A specific sample study of persons exposed to Katrina interviewed 815 residents 5 to 8 months after the massive storm event, and again another year later. Strikingly, the trauma screening questionnaire and the K6 screening scale of anxiety-mood disorders used to predict DSM-IV prevalence found increases in PTSD (31.9%), SMI (89.2%) and suicidal ideation and/or planning (61.6%). The effects of this disaster were exacerbated by an obviously incompetent mental health system, as Gerald P. Koocher PHD put it: "*couple these realities with a mental health system that was likely inadequate before the storm, and a serious challenge emerges-many people who may need mental health care, but an insufficient infrastructure to provide it to them. Furthermore, the fact that many of Katrina's victims were members of minority and economically disadvantaged groups further stains the mental health system that may not be up to the task of providing culturally competent care.*". The combination of evident increases in post-traumatic stress disorder and the costs required to treat it will undoubtedly be a recurring theme in a climate changed world causing severe economic distress in many under-resourced countries.

## Farming Communities:

Another example of groups that routinely face severe weather events are Australian and Indian farming communities (see Figure 2 and Figure 3). Studies of these groups have linked droughts and floods, resultant soil degradation or inundation, and personal economic hardships as exacerbating the farmer's susceptibility to suicide and functioning as the primary driver of high suicide rates: whether in a developed or underdeveloped country the mental health impact of severe weather events is essentially the same: the farmer is unable to farm day to day leading to an outflow (migration) from rural regions, removing the farmer from such an emotionally and psychologically significant place, removing their "sense of place," all issues intrinsically linked to one's feelings of mental stability. All these factors combined generate a breeding ground for accumulated stress, depression and vulnerability to suicide, and despite the high levels of suicide rates being nuanced and not attributable to no cause, the continuing research into this topic is revealing extreme weather events are a major contributor.

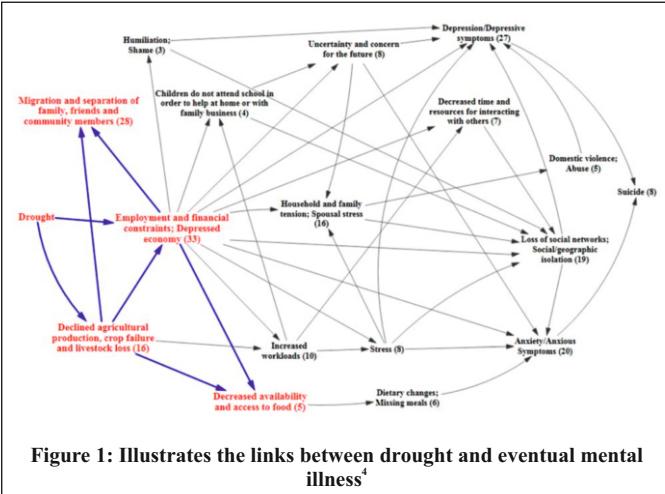


Figure 1: Illustrates the links between drought and eventual mental illness<sup>4</sup>

## Direct Effects:

Natural disasters including floods, cyclones, hurricanes, droughts, and rising sea levels are all acknowledged by the scientific community to be increasing in both frequency and severity due to human activity. Like any major life changing event where there are instances of exposure to loss of life, resources, social support, migration and so on, humans are vulnerable to serious mental health impacts. For example, exposure to life threatening situations is acknowledged in the clinical literature as a cause of SSMI (severe mental illnesses), particularly post-traumatic stress disorder.

## Storm Events:

So far as climate change and related severe weather events are concerned, Hurricane Katrina provides an excellent example of the clear nexus between

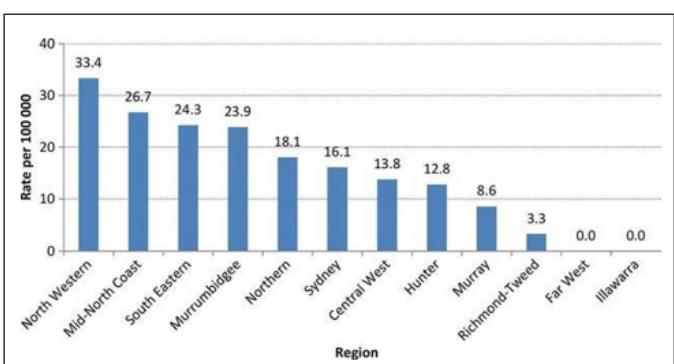
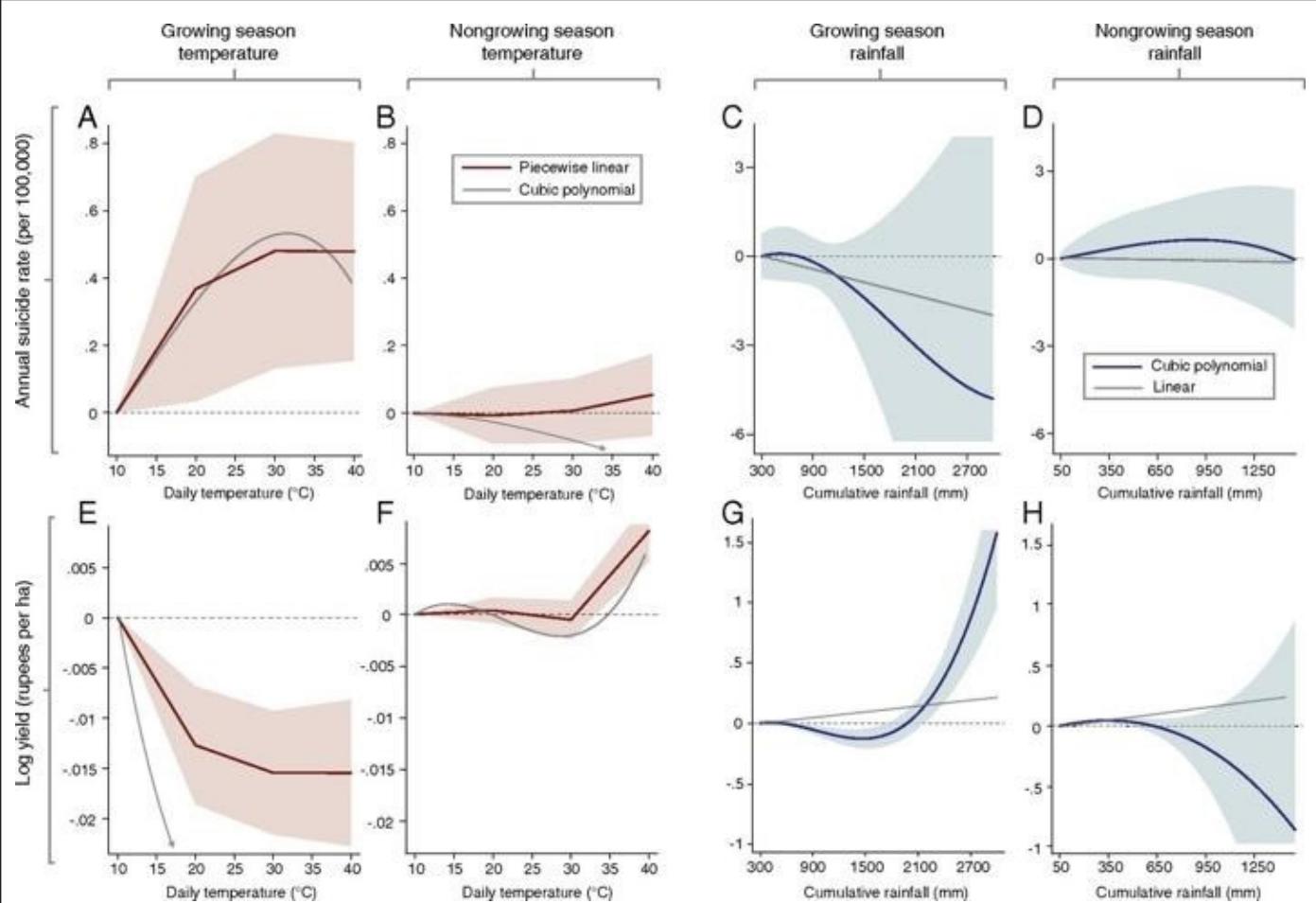


Figure 2: Suicide rates of farmers in New South Wales by region.<sup>11</sup>



**Figure 3: Depicts the response of annual suicides rates (deaths per 100 000 people) to (A) growing season and (B) nongrowing season temperatures. Response of annual suicide rates to cumulative (c) growing season and (D) nongrowing season rainfall. (E-H)<sup>12</sup>**

Those countries most vulnerable to climate change are, expectedly, highly dependent on agriculture and are severely under resourced to deal with the mental health impact of climate change on their farming communities.

Overall, events associated with climate change such as heatwaves, floods, rising sea levels, are all the starting point for a variety of life altering situations, such as migration, inability to meet financial requirements and so on, resulting in accumulated stress levels and inevitably a higher rate of mental illnesses.

#### Indirect Effects:

Indirect effects of climate also have a serious impact on mental health.

Throughout human history, people have migrated due to general economic factors, however the rate of economic migration is expected to increase rapidly, with 1 billion people having to migrate specifically because their place of origin has become uninhabitable due to climate change.

The research literature shows a clear connection between migration and poor mental health outcomes. For example, a cross-national study found that Mexicans who moved to the United States had higher levels of depression compared to those who had never left Mexico. Some of the causal factors included social isolation; lack of financial support; a sense of longing of your “hometown” (known as “solastalgia.”) and systematic discrimination, particularly in the United States.

The real and societal costs of dealing with the mental health impacts of climate driven migration are yet to be fully comprehended. However, to select a single event example, in Australia after the 2020 bushfire season, \$76 million (AUD) was spent delivering mental health services to the psychologically effected.

In a world of 1 billion climate migrants suffering poor mental health, the costs of treatment will undoubtedly well out of reach for those countries most vulnerable to climate change and least able to control their borders.

#### CONCLUSION:

The connection between severe weather events and poor mental health is well understood. This paper suggests that climate change will amplify that connection due to its global impact. The impact will be felt unevenly across the globe with

those most vulnerable to climate change expectedly being hit extremely hard in terms of poor mental health. It is vital that decision-makers take this issue very seriously as its global implications for mental health are catastrophic and will leave highly vulnerable nations struggling to simultaneously fight an environmental and mental health crisis.

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